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Effects of Sectioning in Psychology I

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When we compare the ability of the students in their mental tests with their accomplishments in college work, we find a greater measure of college success for the students with higher mental scores than for those with lower mental scores. The median score on the Otis Self-Administering mental test for 71 students who have not met with passable success during the past term is 32 as compared with the median of all, 41. Subtracting the lowest score, 10, made by any one, from both medians, we have the ratio of 22 to 31. The lower median score is 61% as high as the median of all. These students may be said to have, roughly, 61% as much ability as the average, yet in accomplishment in their psychology objective tests (200 questions) they received only 56% as high a median score as the median of all. Apparently our psychology is more suited to those of greater ability.

The correlation between ability and accomplishment in psychology for these students was .57. But the correlation between their ability and all their college work was .25. Thus it appears that while the psychology course did not fit these students as well as it did the average student, it brought scholastic results more nearly in accordance with their ability than did the other college subjects.

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EFFECTS OF SECTIONING IN PSYCHOLOGY I

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I. The Problem. — The problem was to see what is the effect on achievement when Psychology I classes are sectioned into three intelligence levels, there being no systematic plan for varying the instruction for the different groups. This experiment was carried out in Iowa State Teachers College in the fall of 1926.

II. The Method of Sectioning. — All students taking Psychology I were given an intelligence test which was a combination of the Otis Self-Administering test and a Directions test prepared by Dr. E. O. Finkenbinder. It was the plan where possible to schedule at least three classes for each period in which there was a class in the subject, so that three levels of intelligence would be represented. Further, where possible, a fourth type of class for the same period was organized, this being a control class of about the same range of intelligence and the same average intelligence as found for the entire group taking the subject. The lowest third in

intelligence was designated X; the middle third was designated Y; the top third, Z; the control group, O. As no instructor taught more than three classes in the subject, it was not possible to assign each instructor all four types of classes. This is a somewhat objectionable limitation in the control of the experiment.

III. Comparability of the Segregated and Unsegregated groups as to Intelligence. — The sectioning was not perfect due to the time pressure under which it needed to be done, and to the fact that the nature of the intelligence distributions presenting themselves for enrollment in the different hours would not be uniform. The following table shows the mean for intelligence, standard deviation, range, and number for each type of group. Ox refers to students of X ability who were placed in the various control groups. Similarly, Oy and Oz refer to students of Y and Z ability in control groups. Obviously these so-called groups were not separately organized but are rather theoretical divisions for purposes of comparison in achievement.

Type of Group	Mean	S. D.	Range	N
Σ X Y Z	55.49 ± (11.53)	24.78	20 — 76	213
Σ O	54.04	23.87	20 — 76	221
Σ X	33.5		20 — 41	113
Σ Ox	35		20 — 41	92
Σ Y	46		42 — 52	90
Σ Oy	48		42 — 52	58
Σ Z	61		Above 52	110
Σ Oz	59		Above 52	71

IV. Methods and Results. — Three methods of comparing segregated and unsegregated populations were used, achievement in each case being measured by means of two objective tests, of 100 points each.

1. The mean achievement and the standard deviation for each of the two large groups (the segregated and the unsegregated) were found. The results are:

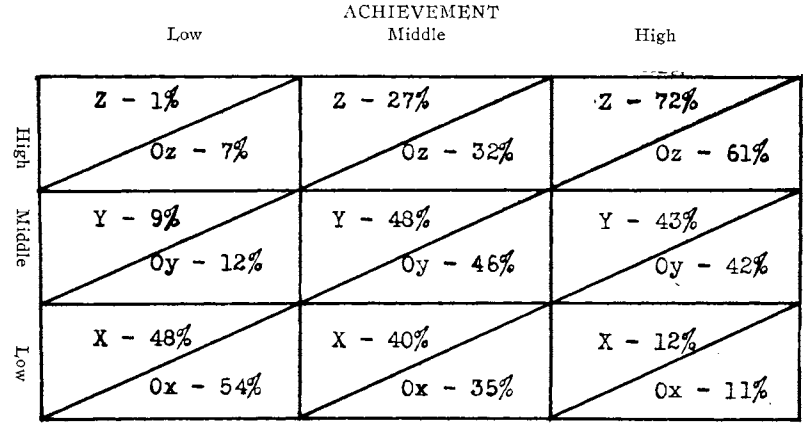
Group	Mean	S. D.
Σ X Y Z	125.16	21.75
Σ o	121.50	19.89

2. As the above method does not show the contribution to superiority in the achievement made by each level ability in the segregated classes, the plan of pairing intelligence scores was employed. The achievement for each intelligence score in the segregated group was distributed according to magnitude. The

same was done for the O classes. An individual with an intelligence score in either the segregated or the O population who was not matched by an equal intelligence score in the other population was eliminated from the computation of results. This caused the elimination of about twenty students from consideration. This pairing method yielded results as follows:

	X vs. Ox		Y vs. Oy		Z vs. Oz	
Mean	104.79	106.2	128.61	127.45	140.58	135.99
S. D.	21.66	18.99	14.16	17.43	15.87	18.96
Amount of Superiority		1.43	1.16		4.59	
Per cent Superiority		1.3	.9		3.38	

3. A third method of comparing achievements of the segregated and unsegregated populations was to distribute for each of these main groups each individual as to his position in the tertiles of the intelligence scale and also in the achievement scale. The achievement scale for the O population was used as the basis. From this operation we obtain a table as follows:



This table should be read from left to right, one small rectangle at a time. The triangle in upper left-hand corner of each rectangle contains the per cent of the sectioned group who fall in that third on achievement. It is seen that 48% of the X's fall in the low third on achievement while 54% of the unsegregated X's (Ox's) fall in the same third.

Some of the rather striking facts which appear are:

(a) The larger percentage of Oz's over Z's who fall in the low third in achievement.

(b) The larger percentage of Z's who reach the top third in achievement.

(c) The approximately equal chances for X's and Ox's to get into the top third; and the similar equal chances for the Y's and the Oy's to do the same.

V. General Conclusions. —

1. Intelligence being held constant and instruction nearly so, the differences in achievement between segregated and unsegregated classes are not so very impressive.

2. Fewer of the segregated Z's fall into the low third in achievement than is true of the Oz's.

3. The brightest pupils seem to profit most from segregation.

4. In both the low and the middle ability groups, the chances for the segregated and the unsegregated getting into the top third in achievement are about equal.

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THE INFLUENCE OF THE SIZE OF RETINAL IMAGE AND OF PERSPECTIVE UPON THE VISUAL PERCEPTION OF DISTANCE: A COMPARATIVE STUDY

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Upon the assumption that visual perceptions are integrated in character and that some kind of an empirical basis is presupposed in their formation, we have attempted to segregate, for experimental purposes, two of the more commonly acknowledged factors in the estimation of relative distances. Both of these factors may be said to be functions of the stimulus, rather than of the response. A comparison of their relative influence in the distance perceptions of young children and adults, as well as a study of acuity in these perceptions, is the object of this investigation.

The experiment is being carried on with children of the Iowa Child Welfare Research Station, aged two to six years, and with members of the staff. The apparatus extends the length of a thirty-foot dark room, being so constructed that the stimuli, illuminated circular fields which vary in size and distance, may be presented to the observer anywhere within a range of thirty feet. The subject, whose position is held constant, views the stimuli with both eyes and judges which of a pair is the nearer; the response is a motor, not a verbal reaction, being one which gives both visual and auditory satisfaction to the child.